

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-3 (Canceled).

Claim 4 (Currently Amended): A video signal coding method comprising the steps of:

determining a coding difficulty level  $d$  of an input video signal for each unit of time;

measuring visual characteristics of the input video signal;

determining a reference value for allocating coding bits on the basis of temporally  $b(d)$  for the amount of coding bits  $b$  allocated for each unit of time and related in advance to the coding difficulty level  $d$  of said input video signal for each unit of time;

determining an actual amount of allocated coding bits  $b_x$  on the basis of the reference value; and

generating coded data by coding the input video signal for each unit of time on the basis of said actual amount of allocated coding bits  $b_x$ , wherein part of the sum  $B_{av}$  of the amounts of allocated bits  $b_{av}$  per unit time for a certain period of time  $T_{vbr}$ , or

$$\cancel{B_{av} = b_{av} T_{vbr}} \quad B_{av} = b_{av} \times T_{vbr},$$

is stored as virtual buffer  $V_{vbr}$  in advance and the actual reference value of the amount of allocated coding bits  $b_{real}$  is obtained by

$$b_{real} = (B_{av} - V_{vbr}) / T_{vbr}$$

so that an amount of allocated bits not smaller than  $b_{real}$  is given as long as  $V_{vbr} > 0$  but an amount smaller than  $b_{real}$  is given otherwise in said step of determining the actual amount of allocated coding bits on the basis of said reference value.

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Claim 5 (Original): The video signal coding method according to claim 4, wherein an upper limit is provided in advance according to the amount of allocated bits  $b_{av}$  when giving an amount of allocated bits exceeding said  $b_{real}$ .

Claim 6 (Original): The video signal coding method according to claim 4, wherein a lower limit is provided in advance according to the amount of allocated bits  $b_{av}$  when giving an amount of allocated bits smaller than said  $b_{real}$ .

Claim 7 (Original): The video signal coding method according to claim 4, wherein the upper limit is provided according to a proportion of scenes that are conspicuously degraded as a result of coding by taking the visual characteristics of the input image into consideration when giving an amount of allocated bits smaller than said  $b_{real}$ .

Claim 8 (Original): The video signal coding method according to claim 4, wherein, when the difference between the sum of the amounts of actually generated bits  $B_{gen}$  in the period of time and the sum of the amounts of available bits  $B_{av}$  in the period of time ( $B_{av} - B_{gen}$ ) is positive when the coding operation in said period of time  $T_{vbr}$  is over, the difference is carried over and added to the sum of the amounts of available bits in the next period of time.

Claim 9 (Original): The video signal coding method according to claim 4, wherein, when the sum of the amounts of available bits exceeds  $R_{total}$  times of the initial sum  $B_{av}$  as a result of carrying over the difference, the reference value of the actually allocated bits per unit time  $b_{real}$  is raised according to the ratio.

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Claims 10-11 (Canceled).

Claim 12 ((Previously Presented): A video signal encoder comprising:

a means for determining a coding difficulty level  $d$  of an input video signal for each unit of time;

a means for measuring visual characteristics of the input video signal;

a means for determining a reference value for allocating coding bits on the basis of temporally  $b(d)$  for the amount of coding bits  $b$  allocated for each unit of time and related in advance to the coding difficulty level  $d$  of said input video signal for each unit of time;

a means for determining an actual amount of allocated coding bits  $b_x$  on the basis of the reference value; and

a means for generating coded data by coding the input video signal for each unit of time on the basis of said actual amount of allocated coding bits  $b_x$ , wherein said means for determining the actual amount coding bits on the basis of the reference value controls the actual amount of allocated bits in such a way that the sum of the generated bits obtained when coding the input video signal for a certain period of time  $T_{vbr}$  does not exceed the amount of bits available for recording a signal having the length of the period of time  $T_{vbr}$  on a recording medium.

Claim 13 (Currently Amended): A video signal encoder comprising:

a means for determining a coding difficulty level  $d$  of an input video signal for each unit of time;

a means for measuring visual characteristics of the input video signal;

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a means for determining a reference value for allocating coding bits on the basis of temporally b(d) for the amount of coding bits b allocated for each unit of time and related in advance to the coding difficulty level d of said input video signal for each unit of time;

a means for determining an actual amount of allocated coding bits b<sub>x</sub> on the basis of the reference value; and

a means for generating coded data by coding the input video signal for each unit of time on the basis of said actual amount of allocated coding bits b<sub>x</sub>, wherein part of the sum B<sub>av</sub> of the amounts of allocated bits b<sub>av</sub> per unit time for a certain period of time T<sub>vbr</sub>, or

$$\underline{B_{av} = b_{av} \cdot T_{vbr} \quad B_{av} = b_{av} \times T_{vbr},}$$

is stored as virtual buffer V<sub>vbr</sub> in advance and the actual reference value of the amount of allocated coding bits b<sub>real</sub> is obtained by

$$b_{real} = (B_{av} - V_{vbr}) / T_{vbr}$$

so that an amount of allocated bits not smaller than b<sub>real</sub> is given as long as V<sub>vbr</sub> > 0 but an amount smaller than b<sub>real</sub> is given otherwise in said step of determining the actual amount of allocated coding bits on the basis of said reference value.

Claim 14 (Original): The video signal encoder according to claim 13, wherein an upper limit is provided in advance according to the amount of allocated bits b<sub>av</sub> when giving an amount of allocated bits exceeding said b<sub>real</sub>.

Claim 15 (Original): The video signal encoder according to claim 13, wherein a lower limit is provided in advance according to the amount of allocated bits b<sub>av</sub> when giving an amount of allocated bits smaller than said b<sub>real</sub>.

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Claim 16 (Original): The video signal encoder according to claim 13, wherein the lower limit is determined as according to a proportion of scenes that are conspicuously degraded as a result of coding by taking the visual characteristics of the input image into consideration when giving an amount of allocated bits smaller than said  $b\_real$ .

Claim 17 (Original): The video signal encoder according to claim 13, wherein, when the difference between the sum of the amounts of actually generated bits  $B\_gen$  in the period of time and the sum of the amounts of available bits  $B\_av$  in the period of time ( $B\_av - B\_gen$ ) is positive when the coding operation in said period of time  $T\_vbr$  is over, the difference is carried over and added to the sum of the amounts of available bits in the next period of time.

Claim 18 (Original): The video signal encoder according to claim 13, wherein, when the sum of the amounts of available bits exceeds  $R\_total$  times of the initial sum  $B\_av$  as a result of carrying over the difference, the reference value of the actually allocated bits per unit time  $b\_real$  is raised according to the ratio.

Claim 19 (Previously Presented): A video signal coding method comprising the steps of:

utilizing a virtual buffer;

allocating an amount of information greater than  $b\_real$  to an image showing a relatively high coding difficulty level, where  $b\_real$  is obtained by

$$b\_real = (B\_av) \times (R\_vbr); \text{ and}$$

controlling a bit rate based on an amount of residue, where the amount of residual is obtained by

$$(b\_real - b\_av)x(T\_vbr);$$

wherein an amount of information smaller than  $b\_real$  is allocated to an image showing a relatively low coding difficulty level.

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